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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1637
Examiner : Jeffrey Siew
Serial No. : 09/898,292
Filed : July 3, 2001
Inventor : Michèle Amouyal
Title : CONSTRUCT OF RECOMBINANT
: NUCLEIC ACIDS CIRCULARIZED BY
: DNA COMPACTING AGENTS

Customer No.: 035811

Docket No.: 1231-01

Confirmation No.: 2241

Dated: May 3, 2004

RESPONSE

Mail Stop Amendment

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:


This is submitted in response to the Official Action dated February 13, 2004.

The Applicant notes with appreciation that Claims 11 – 14, 16 – 23 and 27 are free of the prior art.

The Applicant acknowledges the rejection of Claims 11 – 14, 16 – 23 and 27 under 35 U.S.C. §112, second paragraph. The Applicant notes with appreciation the Examiner's helpful comments concerning the term "HMG." The Applicant respectfully submits that "HMG" means "High Mobility Group" chromosomal proteins. The Applicant encloses for the Examiner's convenience a copy of a definition of HMG. The Applicant respectfully submits that the meaning of "HMG" is quite clear to those of ordinary skill in this particular art and, as a consequence, that the claims are fully in compliance with §112.

In light of the foregoing, the Applicant respectfully submits that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,


T. Daniel Christenbury
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Attorney for Applicant

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P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Certificate of Mailing Under 37 CFR 1.8

For

Postcard

Response

Copy of Definition of "HMG"

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date appearing below.

Name of Applicant, Assignee, Applicant's Attorney
or Registered Representative:

Piper Rudnick LLP
Customer No. 035811

By: 

Date: 3 May 2004

Revised nomenclature for High Mobility Group (HMG) chromosomal proteins [letter]

Michael Bustin, NCI, NIH, Bethesda, Maryland, USA
David Landsman, NCBI, NLM, NIH, Bethesda, Maryland, USA
James Pash, MESH section, NLM, NIH, Bethesda, Maryland, USA
Marco E. Bianchi, San Raffaele Research Institute, Milano, Italy
Ray Reeves, Washington State University, Pullman, Washington, USA
Klaus Grasser, Aalborg University, Denmark
Lois Maltais, Jackson Laboratory, Bar Harbor, USA
Vincenzo Giancotti, University of Trieste, Trieste, Italy
Jean Thomas, Cambridge, UK
Andrew Travers, Cambridge, UK

The high mobility group (HMG) chromosomal proteins were discovered in mammalian cells more than 30 years ago and named according to their electrophoretic mobility in polyacrylamide gels. Subsequent studies revealed that the functional motifs characteristic of the original, canonical, HMG proteins are widespread among nuclear proteins from various organisms. A systematic way to name this group of nuclear proteins has not yet been devised and the root symbol HMG presently serves as an identifier of several proteins that are not related to nuclear HMG proteins. In fact, a literature search with the term HMG (in PubMed) gives thousands of hits, >70% of which are not related to the nuclear HMGs.

To facilitate interactions between various laboratories, to expedite literature searches, and to avoid confusion due to similarity in the names of unrelated proteins, the nomenclature of the HMG nuclear proteins has been revised. The revisions are based on the guidelines endorsed by the mouse and human gene nomenclature committees, and on consultations with the staff of both the National Center for Biotechnology Information and the MESH Section at the National Library of Medicine in Bethesda, USA.

The HMG proteins are subdivided into 3 superfamilies: HMGB (root symbol, HMGB), HMGN (root symbol, HMGN) and HMGA (root symbol, HMGA) superfamily. Each HMG superfamily has a characteristic functional sequence motif. The functional motif of the HMGB family is called the HMG-box, that of the HMGN family, the nucleosomal binding domain, and that of the HMGA family, the AT-hook. Proteins containing any of these functional motifs embedded in their sequence are known as HMG motif proteins. The revisions, which have been applied to the canonical, mammalian HMG proteins, can be adapted to HMG-motif proteins from all organisms. The main features of the revised nomenclature are summarized in Table 1.

The new nomenclature establishes a set of rules and a systematic way to name the genes and proteins belonging to the High Mobility Group (HMG) families of nuclear proteins. The literature searches for the old and new HMG names are both forwards and backwards compatible. Thus, a PubMed search with a new term, HMGB1, now, and in the future, will give the same result as a search with any of the old terms such as HMG1, HMG-1 or amphoterin. A search with HMG-14

in the future will still give all the entries with text words such as either HMG-14, HMG14 or HMGN1 (see table). A search with HMGB, HMGN, or HMGA will yield entries for all the members of that HMG family.

A full description of the HMG nomenclature and a list of the HMG proteins can be found at: <http://www.informatics.jax.org/mgihome/nomen/genefamilies/hmgfamily.shtml>.

The new nomenclature was devised with the active participation of : Michael Bustin, NCI, NIH, Bethesda, Maryland, USA; David Landsman, NCBI, NLM, NIH, Bethesda, Maryland, USA; James Pash, MESH section, NLM, NIH, Bethesda, Maryland, USA; Marco E. Bianchi, San Raffaele Research Institute, Milano, Italy; Ray Reeves, Washington State University, Pullman, Washington, USA; Klaus Grasser, Aalborg University, Denmark; Lois Maltais, Jackson Laboratory, Bar Harbor, USA; Vincenzo Giancotti, University of Trieste, Trieste, Italy; Jean Thomas, Cambridge, UK; Andrew Travers, Cambridge, UK. A list of additional scientists that agreed to have the HMG nomenclature revised is available on request.

| HMG PROTEINS | | | | |
|--------------------|---------------------------------|-------------|---------------------------|---------------------------|
| HMG Motif Proteins | Functional Motif | Root Symbol | New Name (canonical HMGs) | Old name (canonical HMGs) |
| HMG-box proteins | HMG-box | HMGB | HMGB1,2,...n | HMG-1/-2 |
| NBD proteins | nucleosome binding domain (NBD) | HMGN | HMGN1,2,...n | HMG-14/-17 |
| AT-hook proteins | AT-hook (ATH) | HMGA | HMGA1,2,...n | HMG-1/Y/C |

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Last updated: 08 January 2001